

MONTANA FISH AND GAME DEPARTMENT
FISHERIES DIVISION
HELENA, MONTANA

JOB COMPLETION REPORT
INVESTIGATIONS PROJECTS

State of Montana

Project No. F-24-D-30

Name Northwestern Montana Fishery Study

Period Covered May 1, 1960 to April 30, 1961

Title Statewide Lake and Stream
Rehabilitation - Crystal Lake

Abstract:

Crystal Lake (196 acres) in Lincoln County, was treated with 180 gallons of emulsifiable toxaphene on August 25, 1960. This treatment was to remove large-scale suckers (Catostomus macrochelus) and small-size pumpkinseed (Lepomis gibbosus), as well as small populations of largemouth bass (Micropterus salmoides). The toxicant was applied at a rate of 0.033 ppm (1 gallon per 60 acre feet). Recommendations are made for restocking the lake with game fish and for evaluating the success of rehabilitation and stocking as a management tool.

Objectives:

To remove as completely as possible the existing fish populations from Crystal Lake. To establish a rainbow trout fishery after detoxification.

Techniques Used:

On August 25, 1960, Crystal Lake was treated with 180 gallons of emulsifiable toxaphene (6 lbs. of toxaphene per gallon). Two boats with two-man crews were used in applying the toxicant. Application for the most part was accomplished with a 16-foot boat which had K-B boat bailers attached to the decavation plates of the 75 horse power motor. Prop-wash dispersed the toxicant. Application along the shore line and weed beds was accomplished by the other boat (18 H.P. motor) with one boat bailer attached and by back-pack fire pumps.

Findings:

Crystal Lake is located approximately 30 miles west of Libby, Lincoln County, Montana. At the time of rehabilitation there were 196 surface acres, a total of 9,783 acre feet of water, with a maximum depth of 156 feet.

The method of application used on this lake allowed this amount of water to be treated with the minimum of time and personnel. It also dispersed the toxicant in a blanket which would settle more uniformly over the entire lake.

Shortly after the first application of toxicant, distressed and moribund fish were observed along the shore and shallow areas of the lake. These fish were primarily small (2 to 4 inches) pumpkinseed and largemouth bass. As the application progressed, larger (6 to 14 inches) largemouth bass and pumpkinseed (6 to 8 inches) were observed.

Distribution time of the toxicant was approximately four hours. The fish of the above species were in distress and dying condition the entire day. Largescale suckers were not sighted in a distressed and dying condition until the following day. The majority of the dead suckers sank to the bottom after raising to the surface in a distressed condition. Very few suckers drifted into the bays and shore areas where they would have become a public nuisance.

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Date March 20, 1961